

## BRIEF COMMUNICATION

### ON THE TAXONOMIC STATUS OF THE AUSTRALIAN CHITON *PARACHITON VERCONIS* (COTTON & WEEDING, 1939) (MOLLUSCA: POLYPLACOPHORA: LEPTOCHITONIDAE)

Cotton & Weeding (1939)<sup>1</sup> described the chiton, *Parachiton verconis*, from a single posterior valve dredged in 1909 off St Francis Island, South Australia. No complete specimen of this form has been recorded and, although the name has been adopted by various authors<sup>2-6</sup>, they note its close resemblance to the eastern Australian species *Leptochiton (Parachiton) puppis* Hull, 1923, and Kaas & Van Belle<sup>6</sup> suggest that it may be a subspecies of it. Two complete specimens of *P. verconis* collected in South Australia have been located recently, providing the opportunity to compare it with *L. (P.) puppis*; it is apparent that the two forms are conspecific.

The material reported here is deposited in the Australian Museum, Sydney (AM), and the South Australian Museum, Adelaide (SAM). Spirit material is preserved in

2% formaldehyde/propylene glycol solution. The radula was prepared for examination under a scanning electron microscope (SEM) after the method of Bandel<sup>7</sup>.

#### Systematics

Family Leptochitonidae Dall, 1889

Genus *Leptochiton* Gray, 1847

Subgenus *Parachiton* Thiele, 1909

*Leptochiton (Parachiton) puppis* (Hull, 1923)

#### FIGS 1-3

*Parachiton puppis* Hull, 1923<sup>8</sup>, p. 158, pl. 24, figs 1-5; Iredale & Hull, 1925<sup>9</sup>, p. 344, pl. 39, figs 15-19; Iredale & Hull, 1927<sup>10</sup>, p. 46, pl. 6, figs 15-19.  
*Lepidopleurus puppis*: Ashby, 1924<sup>11</sup>, p. 322.

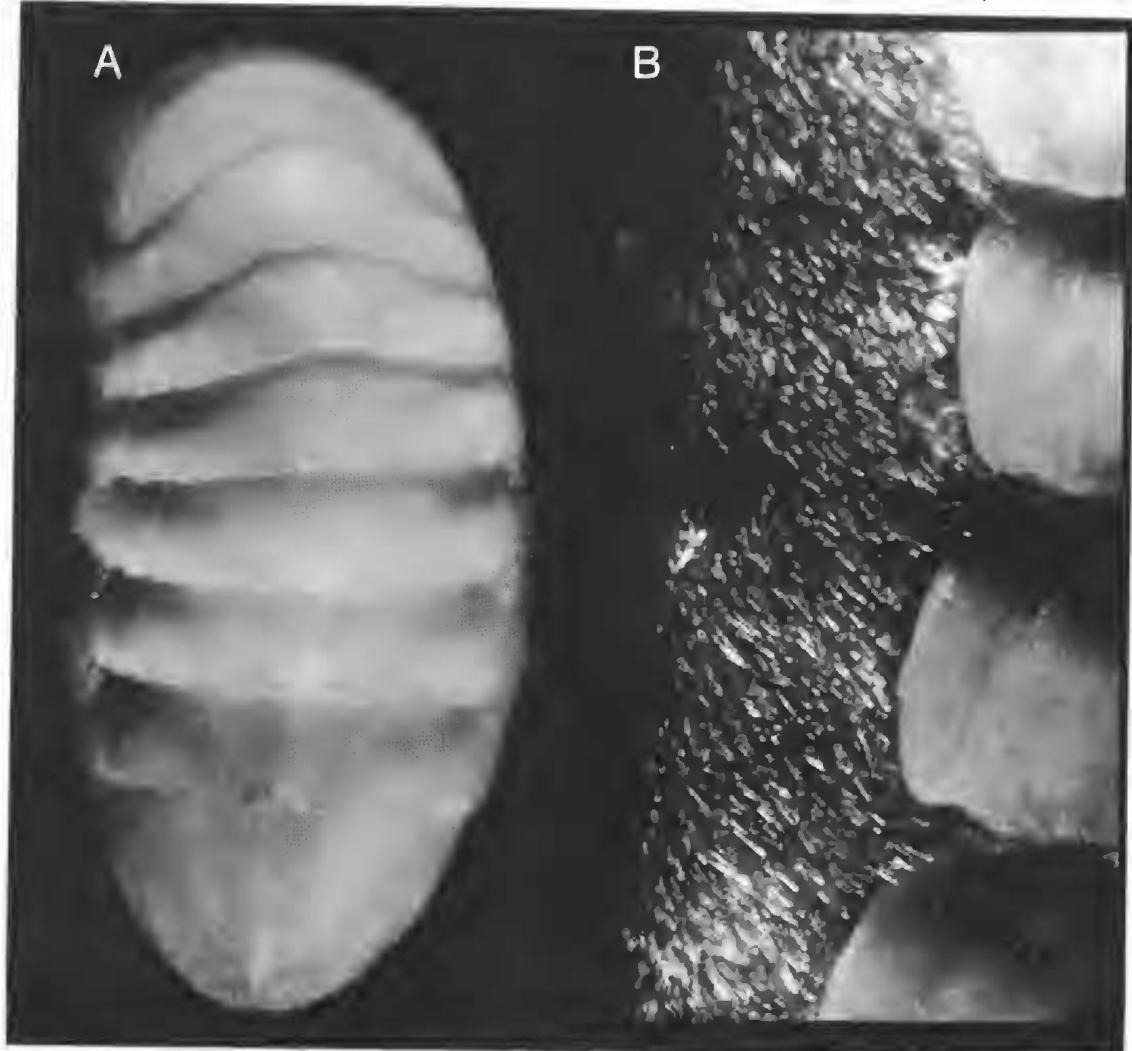


Fig. 1. *Leptochiton (Parachiton) puppis* (SAM D18415). A. whole specimen, x 8.5; B. detail of girdle, x 30.

*Parachiton verconis* Cotton & Weeding, 1939<sup>1</sup>, p. 183, pl. 7, fig. 2; Cotton & Godfrey, 1940<sup>2</sup>, p. 482, fig. 464; Cotton & Godfrey, 1940<sup>3</sup>, p. 22; Cotton, 1964<sup>4</sup>, p. 21, fig. 12.

*Leptochiton (Parachiton) puppis*: Kaas, 1977<sup>12</sup>, p. 85; Kaas & Van Belle, 1980<sup>5</sup>, p. 107; Kaas & Van Belle, 1985<sup>6</sup>, p. 169, fig. 78, map 25.

*Leptochiton (Parachiton) verconis*: Kaas, 1977<sup>13</sup>, p. 85; Kaas & Van Belle, 1980<sup>5</sup>, p. 139; Kaas & Van Belle, 1985<sup>6</sup>, p. 177, fig. 83, map 25.

*Leptochiton verconis*: Zeidler & Gowlett, 1986<sup>13</sup>, p. III.

**Material examined:** Types: *Parachiton puppis*: Holotype (AM C49540) and paratype (AM C149663), Bottle and Glass Point, Vaucluse, N.S.W., coll. A.F.B. Hull & W. Barnes. *Parachiton verconis*: Holotype (SAM D11689) (single posterior valve), St Francis Id, Nuyts Archipelago, S. Aust., dredged in 27–37 m (15–20 fm), coll. J. C. Verco, 1909.

**Other material:** SAM D10670 (1) from Bottle and Glass Rocks, Vaucluse, N.S.W., coll. E. Ashby, 25.ix.1923; SAM D14929 (1) from off Brighton, S. Aust., dredged in 18 m, coll. M. Tilbrook, 8.vi.1968; SAM D18415 (1) from off Monument Hill, northern Spencer Gulf, S. Aust., (32°50'00"S, 137°50'52"E), using Smith-McIntyre Grab dredge in 11 m, coll. E. Oks, ix.1987.

**Description:** A specimen from Bottle and Glass Rocks, Vaucluse, N.S.W., was described in detail<sup>6</sup>. Supplementary data:-

Small chiton to 18 mm (Fig. 1A). Tegumentum with aesthetes arranged in semicircular groups, usually of five aesthetes, on each of the coalescing pustules of the lirae, with the semicircles opening anteriorly (Figs 2A, 2B). Posterior valve with postmucronal slope steep, straight to slightly concave (Fig. 3).

On the dorsal girdle, the "gothic candle-like" spicules of Kaas & Van Belle<sup>6</sup> are random, close-set, becoming larger and denser toward valves in fresh specimens (Fig. 1B). These spicules are easily dislodged, and usually are missing from specimens from older collections.

Radula (Fig. 2C) with narrow, very elongate central teeth, each with median longitudinal ridge, apical edge of head irregular; first lateral teeth narrow, very elongate, strongly curved; major lateral teeth elongate, narrow basally, with wide, bluntly tricuspidate heads, central cusp longest.

Ctenidia large, merobranchial, adanal without interspace, with 10–17 on each side.

**Habitat** On and under stones, pebbles and shell fragments in sand, intertidal to at least 27 m depth.

**Range** South-eastern Australia, from Vaucluse, central N.S.W. to Nuyts Archipelago, western S. Aust.; not recorded from Vic. or Tas.

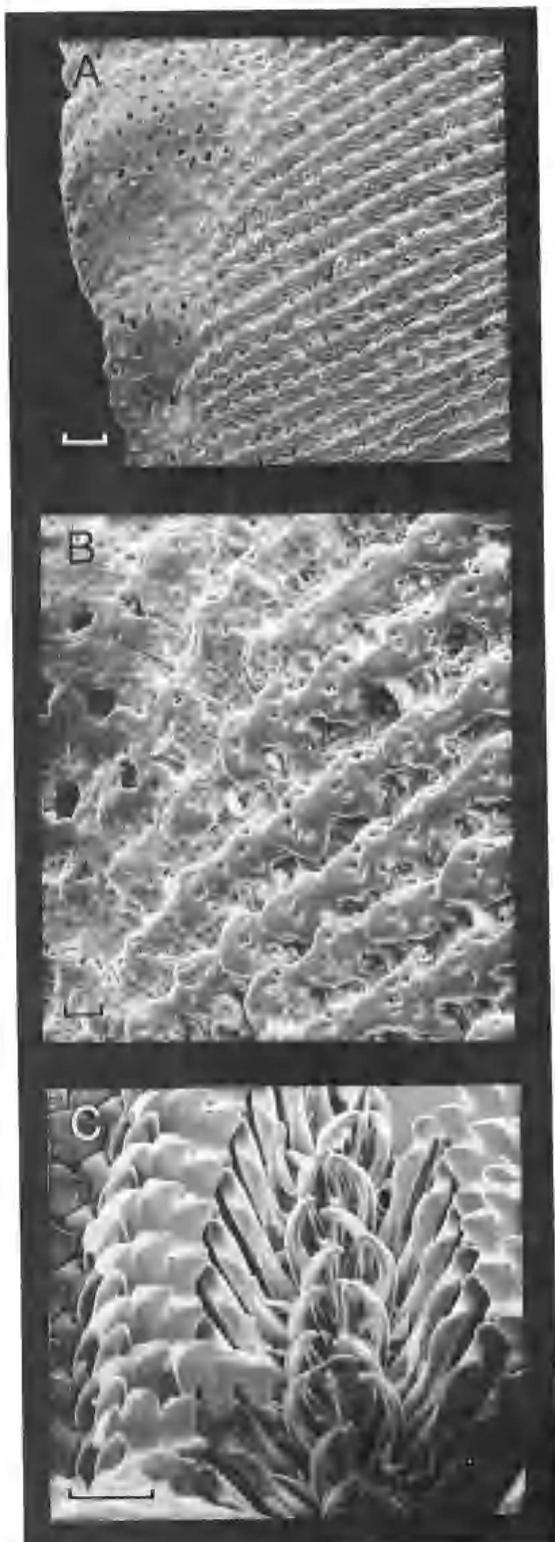


Fig. 2. *Leptochiton (Parachiton) puppis*. A. tegument surface showing coalescing pustules and aesthetes, paratype, scale bar = 100 µm (AM C149663); B. detail of tegument surface showing aesthetes, paratype, scale bar = 20 µm (AM C149663); C. radula, scale bar = 100 µm (SAM D18415).

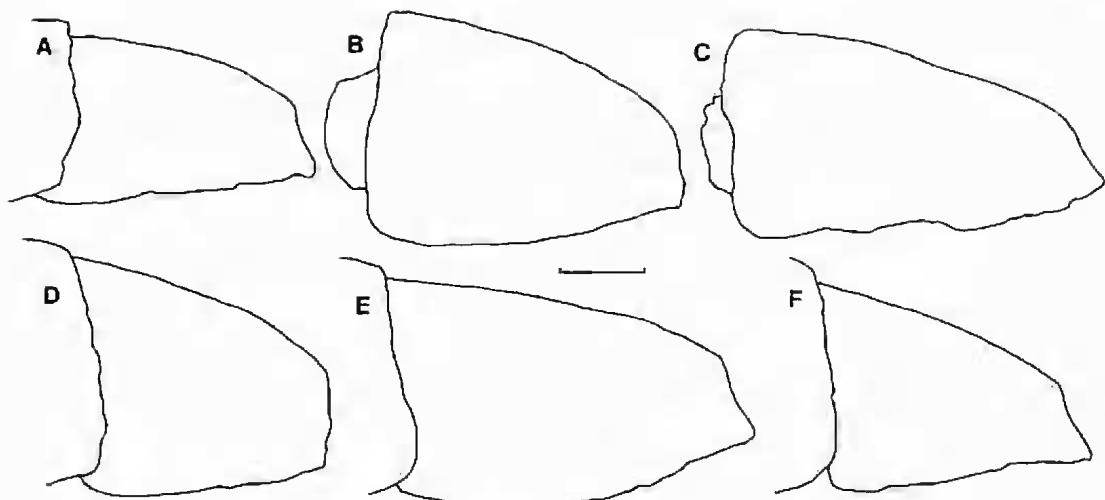


Fig. 3. *Leptochiton (Parachiton) puppis*. Posterior valve lateral profiles. A. holotype (AM C49540); B. paratype (AM CI49663); C. *Parachiton verconis* holotype (SAM D11689); D. (SAM D10670); E. (SAM D14929); F. (SAM D18415); scale bar = 1 mm.

**Remarks** The main difference between *verconis* and *puppis*<sup>1</sup> is fewer granulose lirae on the posterior valve in *verconis*, which was shown to be incorrect by Kaas & Van Belle<sup>2</sup>. The only other difference given between the two forms was the shape of the posterior valve postmucronal slope: concave in *verconis*, straight in *puppis*. An examination of the available specimens has shown intergrading between the two extremes (Fig. 3), so this feature is not a consistent difference. Accordingly, *Parachiton verconis* Cotton & Weeding, 1939, is

considered a synonym of *Leptochiton (Parachiton) puppis* (Hull, 1923).

Kaas & Van Belle<sup>3</sup> record *L. (P.) puppis* from Port Stephens, N.S.W., citing a record in Ashby<sup>4</sup>. However, the specimen referred to there (probably SAM D10670) is stated to have been collected at Bottie and Glass Rocks, Vaucluse, so that record is in error.

I thank Mr I. Loch (AM) for the loan of the type specimens of *Parachiton puppis*. The photographs were taken by Mrs J. Forrest and Ms A. Renfrey (SEM).

<sup>1</sup>Cotton, B. C. & Weeding, B. J. (1939) Trans. R. Soc. S. Aust. 63(2), 180-99, pl. 7.

<sup>2</sup>Cotton, B. C. & Godfrey, F. K. (1940) "The Molluscs of South Australia, Part II: Scaphopoda, Cephalopoda, Aplacophora and Crepidida." (S. Aust. Govt Printer, Adelaide).

<sup>3</sup>Cotton, B. C. & Godfrey, F. K. (1940) Malac. Soc. S. Aust. 2, 1-32.

<sup>4</sup>Cotton, B. C. (1964) "South Australian Mollusca: Chitons." (S. Aust. Govt Printer, Adelaide).

<sup>5</sup>Kaas, P. & Van Belle, R. A. (1980) "Catalogue of Living Chitons (Mollusca: Polyplacophora)". (W. Backhuys, Rotterdam).

<sup>6</sup>Kaas, P. & Van Belle, R. A. (1985) "Monograph of

living chitons (Mollusca: Polyplacophora). Vol. 1. Order Neoliticata: Lepidopleurina". (Brill, Leiden).

<sup>7</sup>Bandel, K. (1984) Zool. Verhandl., Leiden 214, 1-188.

<sup>8</sup>Hull, A. F. B. (1923) Aust. Zool. 3, 157-166, pls 24-26.

<sup>9</sup>Iredale, T. & Hull, A. F. B. (1925) Aust. Zool. 4(2), 75-111, pls 9-12.

<sup>10</sup>Iredale, T. & Hull, A. F. B. (1927) "A Monograph of the Australian Loricates (Phylum Mollusca-Order Loricata)." (R. Soc. N.S.W., Sydney).

<sup>11</sup>Ashby, E. (1924) Trans. R. Soc. S. Aust. 48, 313-22, pl. 31.

<sup>12</sup>Kaas, P. (1977) Basteria 41, 81-86.

<sup>13</sup>Zeidler, W. & Gowlett, K. L. (1986) Rec. S. Aust. Mus. 19(8), 97-115.